

Conrad describes an improved cutout for a primary circuit extending from an electrical substation or a transformer station on a high potential line of 1,000 to 15,000 volts. See Conrad page 1 lines 11-22. The cut-out includes an outer socket member (2) and a removable plug member (4). The socket member (2) includes a hollow sleeve (11) having contact terminals in the form of conductive sleeves (13), (14) depending from large conducting rings (16), (17) in which the respective sleeves are soldered. See Conrad page 2 lines 24-42. Upper faces of the rings (16), (17) are conical to aid in centering the plug member (4) when inserted into the socket (2), and line connections are made to the rings (16), (17). See Conrad page 2, lines 78-91. A lower end of the socket member (2) is open to relieve discharges from blowing of a fuse when in the act of inserting the plug member. See Conrad page 2, lines 16-24.

The plug member as described by Conrad includes a conductive stud (36) that is threaded internally for engagement of an upper contact ferrule (37) of a fuse (38). The fuse (38) is enclosed in a tube (41), the upper end of which is secured to the ferrule (37). A large stranded conductor (43) is connected to the upper ferrule (37), and a terminal member (48) connects with a fuse wire (51) in a cork (49). A small high resistance wire (52) of large tensile strength is also connected to the terminal member (48). The cork is stripped over the terminal members to surround the fusible link and the tensile wire. See Conrad page 3, lines 5-30 and lines 89-96. As explained by Conrad, the provision of the cork renders the fuse wire (51) immune from atmospheric influences, and the natural resiliency of the cork snugly embraces the terminal member (48) and an end cap (54) which closes the lower end of the tube (41). The cork is arranged to fit quite closely in the tube (41). See Conrad page 3, lines 112-118. The cork is expelled from the tube 41 through the open end of the socket member (2) during a heavy overload.

The Final Office Action states that "element (11) of Conrad serves the same or equivalent purpose as the 'fuse body' of the present invention, e.g., to accommodate a fuse element assembly." See Final Office Action page 5. The plug member described by Conrad is further considered a "fuse element assembly" in the Final Office Action. It is respectfully submitted that

neither proposition is consistent with the specification of the present application. The independent claims have been amended for clarity in light of the position taken in the final Office Action and to more clearly reflect the spirit of the specification.

Claim 1 recites a fuse body comprising a first end, a second end and a bore extending therethrough for receiving a fuse element assembly to extend in the bore between terminals enclosing the ends of the fuse body, said bore comprising a clearing portion having a first cross sectional area and a positioning portion having a second cross sectional area, said first cross sectional area larger than said second cross sectional area to prevent the fuse element assembly from contacting an interior surface of the clearing portion.

Conrad neither describes nor suggests the fuse body recited in Claim 1. The sleeve (11) of the socket member (2) described by Conrad, which the office action equates with the fuse body, does not enclose the plug member. Rather, the sleeve (11) of the socket member (2) is open at the lower end to expel the discharge, including portions of the fuse assembly (e.g., the cork), when the fuse operates. If the socket member (2) were enclosed, the invention described by Conrad would be inoperative.

Additionally, Conrad neither describes nor suggests that the sleeve (11) of the socket member (2), which the Office Action equates with a fuse body, prevents the fuse element wire (51) from contacting an interior surface of a clearing portion of the sleeve. Rather, the fuse wire (51) is surrounded by the cork (49) which is snugly fit in a lower end of the fuse tube (41). As such, the construction of the fuse element assembly renders it impossible for the fuse element to contact an interior surface of the sleeve, and hence the sleeve does not prevent the fuse element from contacting it.

Still further, the fuse tube (41), the only other potential "fuse body" described by Conrad, does not exhibit the recited cross sectional areas of the bore and does not prevent the fuse element wire from contacting an interior surface of the tube. Rather, the tube (41) is of a

constant diameter and the cork (49) is fitted into the tube (41) and surrounds the fuse wire (51). Nothing in the construction of the tube itself would prevent contact with the fuse wire.

For at least the reasons set forth above, Claim 1 is submitted to be patentable over Conrad.

Claims 2-4 depend, directly or indirectly, from independent Claim 1. When the recitations of Claims 2-4 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2-4 likewise are patentable over Conrad.

Claim 7 recites a fuse body for a fuse element assembly having an outer dimension, said fuse body comprising "a first end surface," a second end surface" and "a longitudinal bore extending through said fuse body from said first end surface to said second end surface, said bore comprising a positioning portion and a clearing portion, said positioning portion dimensioned to receive the outer dimension of the fuse element and maintain the fuse element in a substantially centered position within said clearing portion, thereby preventing the fuse element assembly from contacting an interior surface of the bore when the fuse element is enclosed in said bore."

As noted above, the sleeve (11) of the Conrad cut-out does not enclose the plug member which the Office Action considers to be the fuse body. One end of the sleeve (11) must be open for the invention of Conrad to operate. Also, the construction of the sleeve (11) does not prevent a fuse element from contacting it, only the construction of the cork (49) within the tube (41) accomplishes this. Finally, the fuse tube (41), the only other possible fuse body described by Conrad, does not meet the limitations of the bore recited in Claim 7, and by itself, is not capable of centering the fuse element within a clearing portion of the bore. The tube (41) is a constant diameter tube having no structure to center the fuse element.

For the reasons set forth above, Claim 7 is submitted to be patentable over Conrad.

Claims 9 and 10 depend, directly or indirectly, from independent Claim 7. When the recitations of Claims 9 and 10 are considered in combination with the recitations of Claim 7, Applicants submit that dependent Claims 9 and 10 likewise are patentable over Conrad.

Independent Claim 12 recites a fuse comprising "a fuse body comprising a first end, a second end and a bore extending therethrough, said bore comprising a clearing portion having a first cross sectional area and a positioning portion having a second cross sectional area; said first cross sectional area different than said second cross sectional area" and "a fuse element assembly enclosed in said bore, said fuse element assembly comprising an outer dimension substantially coextensive with said second cross sectional area, said outer dimension substantially centered within said first cross sectional area, thereby ensuring a clearance between a fuse element and an interior surface of said fuse body within said clearing portion."

For the reasons set forth above, Conrad neither describes nor suggests a fuse element assembly enclosed in a bore in a fuse body. Nor does the cross sectional area of the bore of the sleeve (11) ensure a clearance between the fuse element assembly and an interior surface of the fuse body. The construction of the fuse wire surrounded by the cork in the fuse tube as described by Conrad already assures this.

For the reasons set forth above, Claim 12 is submitted to be patentable over Conrad.

Claims 15-20 depend from independent Claim 12. When the recitations of Claims 15 are considered in combination with the recitations of Claim 12, Applicants submit that dependent Claims 15-20 likewise is patentable over Conrad.

For the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 1-4, 7, 9, 10, 12, and 15-20 be withdrawn.

The rejection of Claims 6, 8 and 13 under 35 U.S.C. § 103 as being unpatentable over Conrad is respectfully traversed.

For the reasons set forth above, it is respectfully submitted that the respective base Claims (Claims 1, 7 and 12) of Claims 6, 8 and 13 are patentable over Conrad. When the recitations of Claims 6, 8, and 13 are considered in combination with the recitations of the base claims, it is respectfully submitted that Claims 6, 8 and 13 are likewise patentable over Conrad.

Additionally, there is no evidence on the record, other than a mere statement in the Office Action to the contrary, that Aluminum Zirconia has been notoriously used to construct fuses.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 6, 8 and 13 be withdrawn.

The rejection of Claims 5, 11 and 14 under 35 U.S.C. § 103 as being unpatentable over Conrad in view of Reese et al. (U.S. Patent No. 5,214,406) is respectfully traversed.

Claims 5, 11, and 14 depend from Claims 1, 7, and 12, respectively which are submitted to be patentable over Conrad for the reasons set forth above. It is submitted that Reese et al. adds nothing to the Conrad reference with respect to Claims 1, 7 and 12, and that Claim 1, 7, and 12 are patentable over the combination of Conrad in view of Reese et al. When the recitations of Claims 5, 11, and 14 are considered in combination with the recitations of Claims 1, 7 and 12, Claims 5, 11, and 14 are likewise submitted to be patentable over the combination of Conrad in view of Reese et al.

Additionally, it is respectfully submitted that a prima facie case of obviousness has not been established. The Office Action states that since the Conrad and Reese et al. references are from the same field of endeavor (fuses), the purpose of the rectangular body disclosed by Reese et al. would be recognized in the invention of Conrad. Applicants point out, however, that Conrad relates to a cut-out for a primary line having a potential of 1000 to 15,000 volts, while Reese et al. relates to a surface mount device. Thus, the teachings of Conrad and Reese et al. are clearly directed toward different significantly different types of fuse arrangements. It is not clear

that one of ordinary skill in the art at the time the invention was made would have considered this to be a viable combination of teachings.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 5, 11 and 14 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Kalra et al.

Serial No.: 09/874,453

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For: FUSE ELEMENT POSITIONING
BODY

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: Art Unit: 2835
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: Examiner: Vortman, Anatoly
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SUBMISSION OF MARKED UP CLAIMS

Hon. Assistant Commissioner for Patents
Washington, D.C. 20231

In furtherance of the response to the Office Action dated January 24, 2003 and made final, Applicants hereby submit marked up versions of the amendments therein.

IN THE CLAIMS

1. (once amended) A fuse body comprising a first end, a second end and a bore extending therethrough for receiving a fuse element assembly to extend in the bore between terminals enclosing the ends of the fuse body, said bore comprising a clearing portion having a first cross sectional area and a positioning portion having a second cross sectional area, said first cross sectional area larger than said second cross sectional area to prevent a fuse element from contacting an interior surface of the clearing portion.

7. (once amended) A fuse body for a fuse element assembly having an outer dimension, said fuse body comprising:

a first end surface;

a second end surface; and

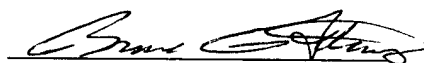
a longitudinal bore extending through said fuse body from said first end surface to said second end surface, said bore comprising a positioning portion and a clearing portion, said positioning portion dimensioned to receive the outer dimension of the fuse element and maintain the fuse element in a substantially centered position within said clearing portion, thereby preventing the fuse element assembly from contacting an interior surface of the bore when the fuse element is enclosed in said bore.

12. A fuse comprising:

a fuse body comprising a first end, a second end and a bore extending therethrough, said bore comprising a clearing portion having a first cross sectional area and a positioning portion having a second cross sectional area; said first cross sectional area different than said second cross sectional area; and

a fuse element assembly [situated] enclosed in said bore, said fuse element assembly comprising an outer dimension substantially coextensive with said second cross sectional area, said outer dimension substantially centered within said first cross sectional area, thereby ensuring a clearance between [said] a fuse element [assembly] and [said] an interior surface of said fuse body within said clearing portion.

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